

EN

ORIGINAL INSTRUCTIONS
PARTICLE COUNTER



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Notes regarding the instructions

Symbols



Warning of electrical voltage

This symbol indicates dangers to the life and health of persons due to electrical voltage.



Warning of explosive substances

This symbol indicates dangers to the life and health of persons due to potentially explosive substances.



Warning

This signal word indicates a hazard with an average risk level which, if not avoided, can result in serious injury or death.



Caution

This signal word indicates a hazard with a low risk level which, if not avoided, can result in minor or moderate injury.

Note

This signal word indicates important information (e.g. material damage), but does not indicate hazards.



Info

Information marked with this symbol helps you to carry out your tasks quickly and safely.



Follow the manual

Information marked with this symbol indicates that the instructions must be observed.

You can download the current version of the instructions and the EU declaration of conformity via the following link:



BQ21



<https://hub.trotec.com/?id=44635>

Safety

Read this manual carefully before starting or using the device. Always store the manual in the immediate vicinity of the device or its site of use.



Warning

Read all safety warnings and all instructions.

Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

- Do not use the device in potentially explosive rooms or areas and do not install it there.
- Do not use the device in aggressive atmosphere.
- Do not immerse the device in water. Do not allow liquids to penetrate into the device.
- The device may only be used in dry surroundings and must not be used in the rain or at a relative humidity exceeding the operating conditions.
- Protect the device from permanent direct sunlight.
- Do not remove any safety signs, stickers or labels from the device. Keep all safety signs, stickers and labels in legible condition.
- Do not open the device.
- Avoid looking directly into the laser beam.
- Never point the laser beam at people or animals.
- Only use the device, if sufficient safety precautions were taken at the surveyed location (e.g. when performing measurements along public roads, on building sites etc.). Otherwise do not use the device.
- Observe the storage and operating conditions (see Technical data).

Intended use

The device is intended for measuring the size and number as well as the mass concentration of particles in the air.

To use the device for its intended use, only use accessories and spare parts which have been approved by Trotec.

Foreseeable misuse

The device may not be used for measurements in liquids.

The device may not be used in potentially explosive atmospheres, when wet or very humid.

Any unauthorised changes, modifications or alterations to the device are forbidden.

Personnel qualifications

People who use this device must:

- have read and understood the instructions, especially the Safety chapter.

Safety signs and labels on the device

Note

Do not remove any safety signs, stickers or labels from the device. Keep all safety signs, stickers and labels in legible condition.

The following safety signs and labels are attached to the device:

Warning sign	
Meaning	<p>The warning sign is located on the back of the device and indicates that the device is equipped with a class 3R laser.</p> <p>The power is less than 1.5-3 mW. The frequency range of the laser is at 780 nm.</p> <p>Do not look directly into the laser beam or the opening from which the laser beam emerges!</p>

Residual risks



Warning of electrical voltage

There is a risk of a short-circuit due to liquids penetrating the housing!

Do not immerse the device and the accessories in water. Make sure that no water or other liquids can enter the housing.



Warning of electrical voltage

Work on the electrical components must only be carried out by an authorised specialist company!



Warning of explosive substances

Do not expose the batteries to temperatures above 60 °C! Do not let the batteries come into contact with water or fire! Avoid direct sunlight and moisture. There is a risk of explosion!



Warning of laser radiation

Laser class 3R, P max.: < 1.5–3 mW, λ: 780 nm, EN 60825-1:2014

Do not look directly into the laser beam or the opening from which it emerges.

Never point the laser beam at people, animals or reflective surfaces. Even brief eye contact can lead to eye damage.

Examining the laser output aperture by use of optical instruments (e.g. magnifying glass, magnifiers and the like) entails the risk of eye damage.

When working with a laser of class 3R, observe the national regulations on wearing eye protection.



Warning

Risk of suffocation!

Do not leave the packaging lying around. Children may use it as a dangerous toy.



Warning

The device is not a toy and does not belong in the hands of children.



Warning

Dangers can occur at the device when it is used by untrained people in an unprofessional or improper way! Observe the personnel qualifications!



Caution

Lithium-ion batteries might catch fire in case of overheating or damage. Ensure a sufficient distance to heat sources, do not subject lithium-ion batteries to direct sunlight and make sure not to damage the casing. Do not overcharge lithium-ion batteries. If the battery is not permanently installed in the device, only use smart chargers that switch off automatically when the battery is fully charged. Charge lithium-ion batteries in due time before they are discharged completely.



Caution

Keep a sufficient distance from heat sources.

Note

To prevent damages to the device, do not expose it to extreme temperatures, extreme humidity or moisture.

Note

Do not use abrasive cleaners or solvents to clean the device.

Information about the device

Device description

The particle counter is designed to measure the size and number as well as the mass concentration of particles in the air. The detected data can be used for analysing cleanrooms or prove environmental burdens from particulates.

To detect the data, the particle counter sucks in air for a selectable duration and determines the size and number or mass concentration of particles contained in it.

Particles sized 2.5 µm and 10.0 µm are treated equally during this process.

The detected values for all active particle sizes are simultaneously displayed on a colour display. Additionally, the air contamination is indicated on a colour scale. As soon as the particle burden is no longer in the green area of this scale, a beep is emitted (see table Alarm limit values for particle concentration).

The device is equipped with an integrated measuring cell with laser (class 3R laser, 780 nm, 1.5-3 mW). Owing to the tamper-proof enclosure it is classified as laser class 1 (DIN EN 60825-1) according to the Technical Regulations of the Occupational Health and Safety Ordinance on Artificial Optical Radiation (TROS) devised by the German Federal Institute for Occupational Health and Safety. Maintenance and repair work may only be carried out by trained expert staff observing the legal regulations.

The device can be connected to another terminal device via Bluetooth. In combination with the Trotec MultiMeasure Mobile App, there are numerous possibilities for evaluating and displaying the measured values.

The measurement results can be displayed and saved on the terminal device either numerically or in form of a chart. Then, the measurement data can be sent in PDF or Excel format.

The app also includes a report generation function, an organiser function, one for customer management and further analysis options. Moreover, it is possible to share measurements and project data with colleagues in another subsidiary. If MultiMeasure Studio Professional is installed on a PC, you can even use report templates and ready-made text blocks for various fields of application to turn the data into professional reports.

Alarm limit values for particle burden¹⁾

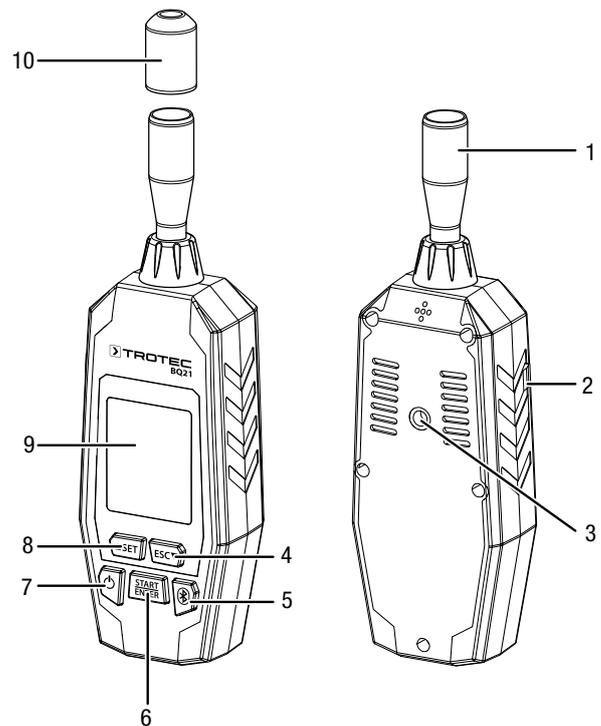
Channel	Green	Yellow	Orange	Red	Purple	Brown
2.5 µm	0 to 545	546 to 1235	1236 to 2470	2471 to 3300	3301 to 4950	> 4950
10 µm	0 to 68	69 to 170	171 to 340	341 to 454	455 to 680	> 680

Alarm limit values for particle concentration¹⁾

Air quality	Value in µg/m ³	Indicator scale
Excellent	0 to 10 µg/m ³	Green
Good	10 to 35 µg/m ³	Yellow
Low contamination	35 to 75 µg/m ³	Orange
Moderate contamination	75 to 150 µg/m ³	Red
High contamination	150 to 250 µg/m ³	Purple
Severe contamination	> 250 µg/m ³	Brown

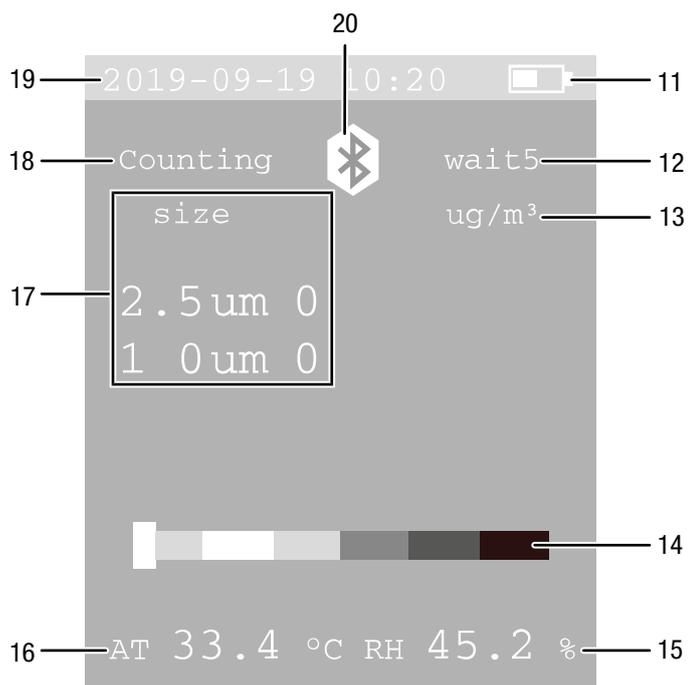
¹⁾The alarm limit values specified here refer to an average PM2.5 particle concentration over a period of 24 hours and are derived from the global air quality guidelines of the WHO (World Health Organization). They are in no way legally binding and have a merely orientating function.

Device depiction



No.	Designation
1	Measuring funnel
2	USB port
3	Tripod thread
4	ESC / ▼ button
5	Bluetooth button
6	START / ENTER button
7	Power button
8	SET / ▲ button
9	Colour display
10	Protective cap

Display



No.	Designation
11	Battery indication
12	Start delay Measurement duration Measuring interval
13	Unit (number or $\mu\text{g}/\text{m}^3$)
14	Indicator scale for particle contamination
15	Relative humidity
16	Ambient temperature
17	Size and number or mass concentration of particles
18	Measurement status
19	Date and time
20	Bluetooth symbol

Technical data

Parameter	Value
Model	BQ21
Dimensions (length x width x height)	188 mm x 52 mm x 35 mm
Weight	175 g
Interfaces	USB port for charger
Tripod thread	1/4 inch – 20 UNC
Operating conditions	0 °C to +40 °C with 20 to 80 % RH
Storage conditions	-10 °C to +50 °C with 10 to 90 % RH
Display	2 inch colour LCD with background illumination
Functions	Alarm function, °C/°F switching
Data storage	5,000 data records on internal memory
Bluetooth	
Frequency range	2.4 GHz
Max. transmission power	10 dBm
Energy	
Battery	Li-ion
Nominal voltage	3.7 V ---
Capacity	1500 mAh
Operating time	approx. 5 hours of continuous operation
Charging time	approx. 3.5 hours with an alternating current adapter
Automatic switch-off	3 min, 15 min or 30 min
Temperature measurement	
Temperature range	0°C to 50°C (32°F to 122°F)
Temperature accuracy	± 1 °C (2 °F)
Humidity measurement	
Humidity level measuring range	0 % RH to 100 % RH
Humidity level accuracy	± 3.5 % RH at 20 % to 80 % RH ± 5 % RH at 0 % to 20 % RH and 80 % to 100 % RH

Parameter	Value
Particle counters	
Channels (detectable particle sizes)	2.5 µm, 10.0 µm
Flow rate	0.9 l/min controlled by internal pump
Counter mode	Concentration
Counting efficiency	100 % for particles > 0.45 µm (according to ISO 21501)
Zero count	1 count/5 minutes (according to JIS B9921)
Start delay	5 seconds
Sample inlet	Isokinetic probe
Calibration	Using monodisperse latex particles (PSL particles; compliant with NIST)
Light source of the measuring cell	Laser class 1 (class 3R laser enclosed in a way to prevent tampering, 780 nm, 1.5-3 mW, classified according to DIN EN 60825-1 and the Technical Regulations of the Occupational Health and Safety Ordinance on Artificial Optical Radiation (TROS))
Mass concentration	
Channels	PM 2.5 / PM 10
Measuring range	0 to 2000 µg/m ³
Resolution	1 µg/m ³

Scope of delivery

- 1 x Particle counter BQ21
- 1 x USB connecting cable
- 1 x Charger
- 1 x Stand with screw
- 1 x Quick guide

Transport and storage

Note

If you store or transport the device improperly, the device may be damaged.

Note the information regarding transport and storage of the device.

Transport

For transporting the device, use the bag included in the scope of delivery in order to protect the device from external influences.

The supplied Li-ion batteries are subjects to the requirements of dangerous goods legislation.

Observe the following when transporting or shipping Li-ion batteries:

- The user may transport the batteries by road without any additional requirements.
- If transport is carried out by third parties (e.g. air transport or forwarding company), special requirements as to packaging and labelling must be observed. This includes consulting a dangerous goods specialist when preparing the package.
 - Only ship batteries if their housing is undamaged.
 - Please also observe any other national regulations.

Storage

When the device is not being used, observe the following storage conditions:

- dry and protected from frost and heat
- protected from dust and direct sunlight
- with a cover to protect it from invasive dust if necessary
- the storage temperature complies with the values specified in the Technical data

Operation

Charging the battery

The battery is partially charged upon delivery to avoid damage to the battery caused by a deep discharge.



Warning of electrical voltage

Before each use of the charger or power cable, check for damages. If you notice damages, stop using the charger or power cable!

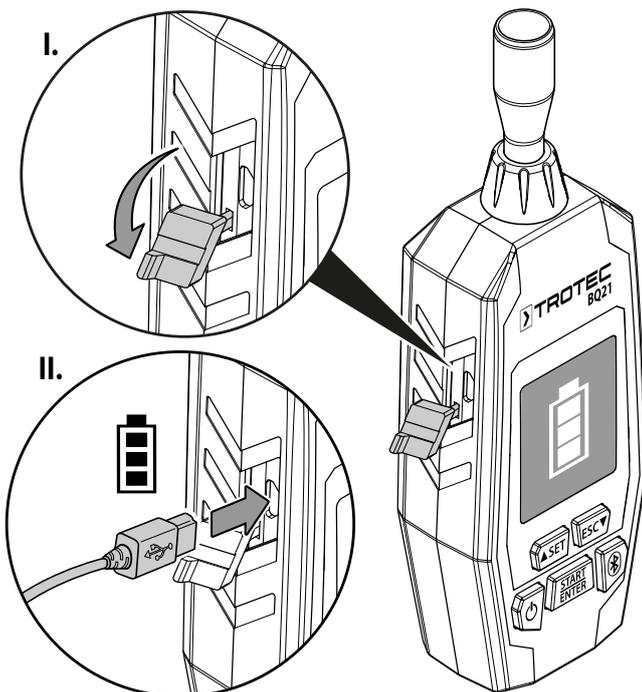
Note

The battery can be damaged in case of improper charging.

Never charge the battery at ambient temperatures below 10 °C or above 40 °C.

The battery should be charged prior to initial start-up and when the battery is low (battery indicator (11) flashes). To do so, please proceed as follows:

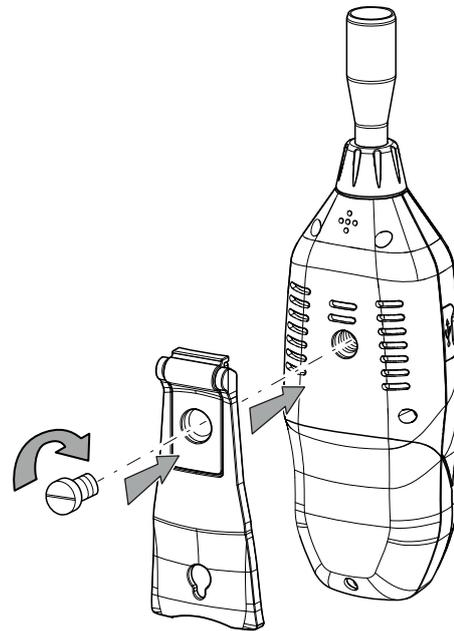
1. Plug the charger into a properly fused mains socket.
2. Connect the charging cable to the device's USB connection.



⇒ A charging indicator appears on the display.

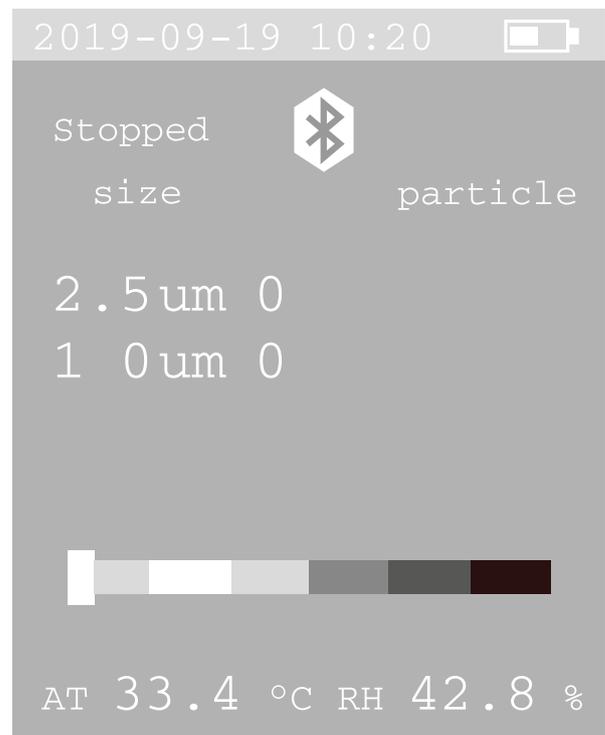
Mounting the stand (optional)

If required, you can fasten the stand to the tripod thread using the screw included in the scope of delivery.



Switch-on

1. Press and hold the Power button (7) until the colour display turns on.
 - ⇒ An acoustic signal is emitted.
 - ⇒ The device is ready for operation as soon as the start screen is displayed.



Enable or disable Bluetooth

The device can be connected to another terminal device via Bluetooth. In combination with the Trotec MultiMeasure Mobile App, there are numerous possibilities for evaluating and displaying the measured values.

1. Press the Bluetooth button (5) to activate the function.
 - ⇒ The Bluetooth symbol (20) is indicated.
2. Press the Bluetooth button (5) again to deactivate the Bluetooth function.
 - ⇒ The Bluetooth symbol (20) goes out.

The Bluetooth function can also be activated and deactivated via the system settings.

For more information on the download and the functionalities of the app, please refer to the chapter *Trotec MultiMeasure Mobile app*.

Carrying out a measurement



Info

Please note that moving from a cold area to a warm area can lead to condensation forming on the device's circuit board. This physical and unavoidable effect can falsify the measurement. In this case, the display shows either no measured values or they are incorrect. Wait a few minutes until the device has become adjusted to the changed conditions before carrying out a measurement.

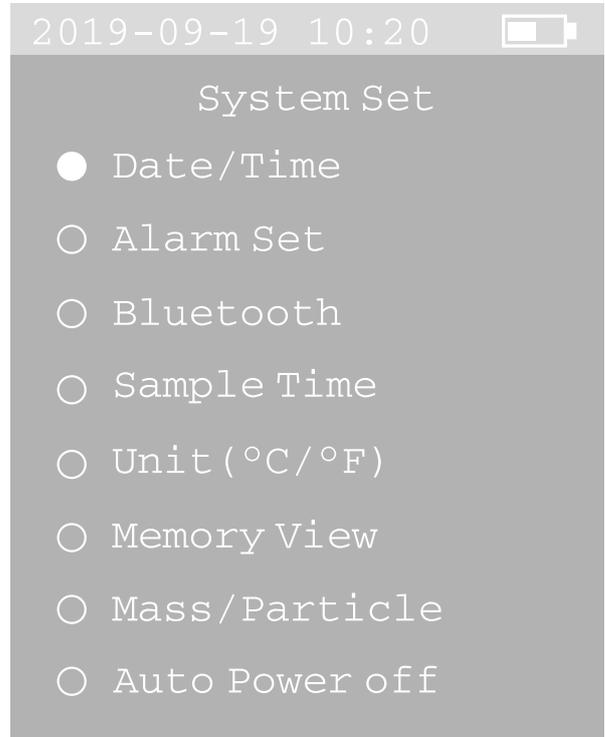
1. Remove the protective cap (10) from the measuring funnel (1).



2. Point the device at the area to be measured.
3. Press the *START* button (6).
 - ⇒ The device counts down for approx. 5 s before starting the measurement.
 - ⇒ The measurement will run for the measuring interval set.
 - ⇒ The measurement results are displayed for each measurement channel.

System settings

1. Press the *SET* button (8) for approx. 2 s to open the system settings.
 - ⇒ The following menu is displayed:



2. Press the *SET* (8) or *ESC* button (4) to select a submenu.
3. Press the *START/ENTER* button (6) to confirm the selection.
4. Press the *SET* (8) or *ESC* button (4) to make the desired setting in the submenu.
5. Afterwards press the *ESC* button (4) for approx. 2 s to leave the submenu or the system settings menu.

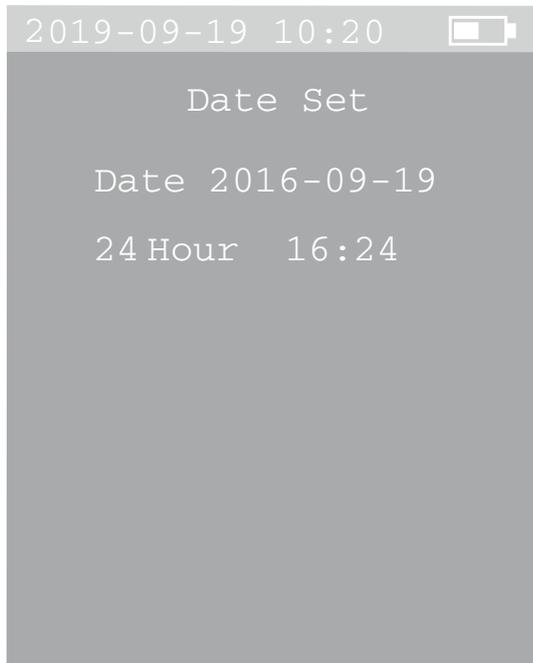
The following submenus offering further setting options can be accessed from the main menu:

Submenu	Function
Date/Time	Set date and time
Alarm Set	Enabling/disabling the alarm
Bluetooth	Switching the Bluetooth function on and off
Sample Time	Setting the measurement duration
Unit (°C / °F)	Changing the temperature unit
Memory View	Displaying the memory use
Mass/Particle	Selecting the measuring mode Particle (<i>Particle</i>) or mass concentration (<i>Mass</i>)
Auto Power Off	Setting the automatic switch-off

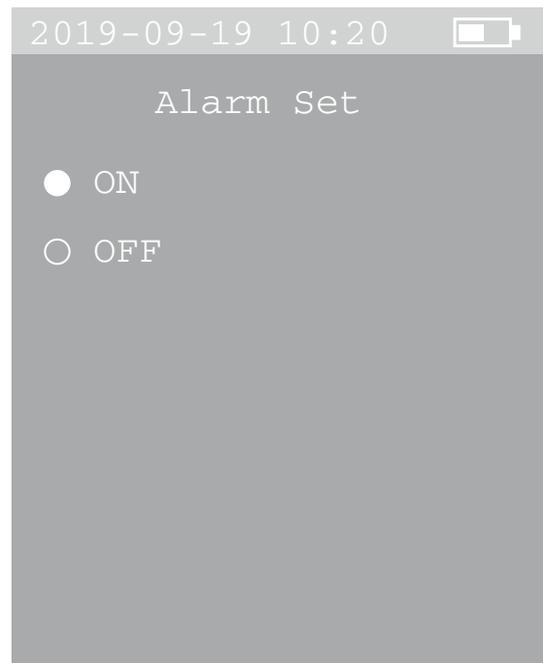
Set date and time

You can set the date and time and select whether to display the time in 24 h or 12 h format.

Please proceed as follows to set the date and time:



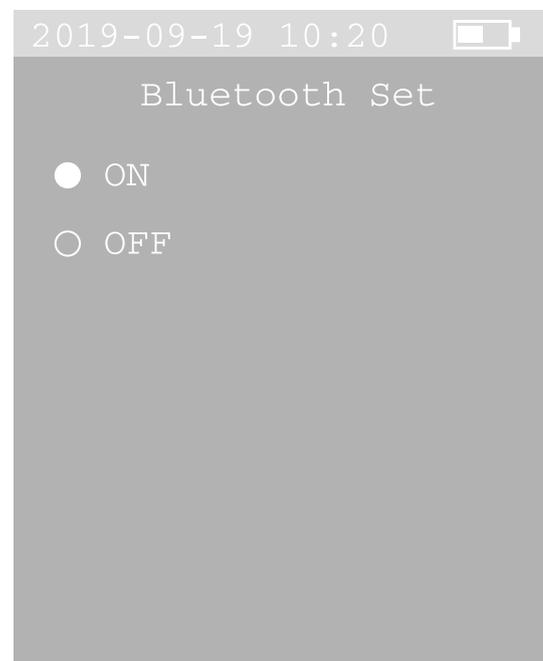
Enabling/disabling the alarm



Please proceed as follows to enable or disable the alarm:

1. Press the *SET* (8) or *ESC* button (4) to select the *ON* (alarm enabled) or *OFF* (alarm disabled) setting.
2. Press the *ESC* button (4) for approx. 2 s to return to the system settings menu.

Switching the Bluetooth function on/off



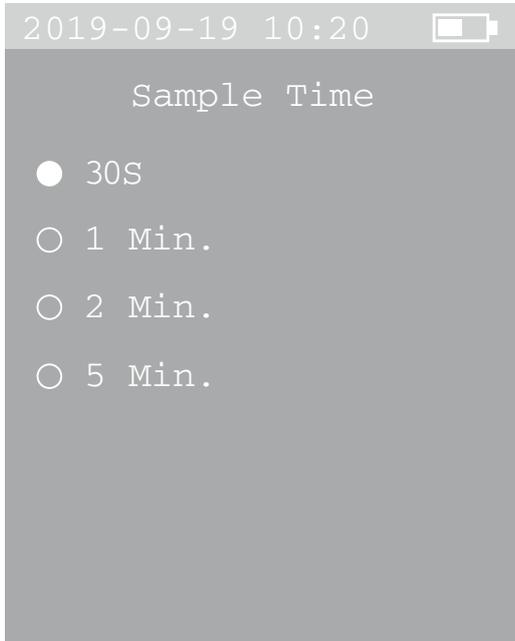
Please proceed as follows to activate or deactivate Bluetooth via the system settings:

1. Press the *SET* (8) or *ESC* button (4) to select the *ON* (Bluetooth on) or *OFF* (Bluetooth off) setting.
 2. Press the *ESC* button (4) for approx. 2 s to return to the system settings menu.
- ⇒ The Bluetooth symbol appears on the start screen.

1. Press the *SET* (8) or *ESC* button (4) to set the year.
 2. Press the *START* button (6) to confirm the selection.
 3. Press the *SET* (8) or *ESC* button (4) to set the month.
 4. Press the *START* button (6) to confirm the selection.
 5. Press the *SET* (8) or *ESC* button (4) to set the day.
 6. Press the *START* button (6) to confirm the selection.
 7. Press the *SET* (8) or *ESC* button (4) to select either 24 h or A.M./P.M. format.
 8. Press the *START* button (6) to confirm the selection.
 9. Press the *SET* (8) or *ESC* button (4) to set the hours.
 10. Press the *START* button (6) to confirm the selection.
 11. Press the *SET* (8) or *ESC* button (4) to set the minutes.
 12. Press the *START* button (6) to confirm the selection.
 13. Press the *ESC* button (4) for approx. 2 s to return to the system settings menu.
- ⇒ The date and time settings are saved.

Setting the measurement duration

You can select whether a measurement is to take 30 s, 1 min, 2 min or 5 min.

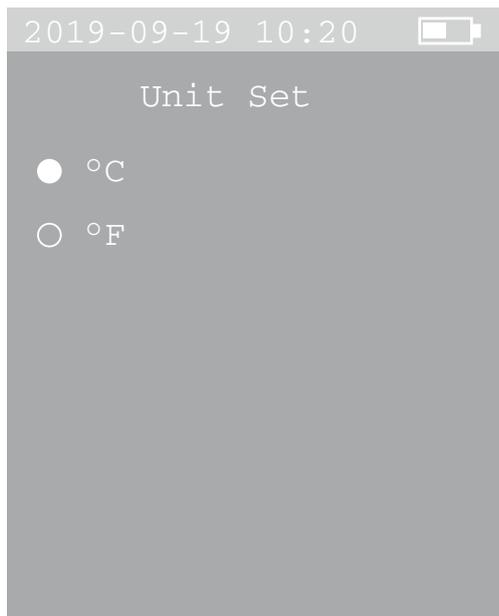


Please proceed as follows to set the measurement duration:

1. Press the *SET* (8) or *ESC* button (4) to select the desired measurement duration.
2. Press the *ESC* button (4) for approx. 2 s to return to the system settings menu.

Changing the temperature unit

You can select whether the temperature is to be displayed in °C or °F.

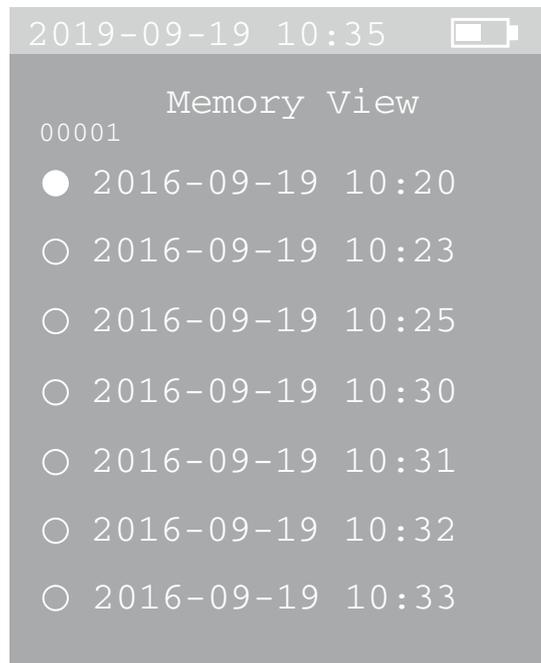


Please proceed as follows to change the temperature unit:

1. Press the *SET* (8) or *ESC* button (4) to switch between °C and °F.
2. Press the *ESC* button (4) for approx. 2 s to return to the system settings menu.

Displaying the memory use

Up to 5,000 data records can be stored on the device's internal memory.



Please proceed as follows to display the memory use:

1. Press the *SET* (8) or *ESC* button (4) to select the desired measurement.
 - ⇒ The measurement values are shown on the display (9).
 - ⇒ Alternatively, you can also select the different measurements from this screen using the *SET* (8) and *ESC* (4) buttons. The upper left-hand corner of the display shows the corresponding number of the respective measurement.
2. Press the *START* button (6) to confirm the selection.
3. Press the *ESC* button (4) for approx. 2 s to return to the overview of measurements.
4. Press the *ESC* button (4) for approx. 2 s to return to the system settings menu.

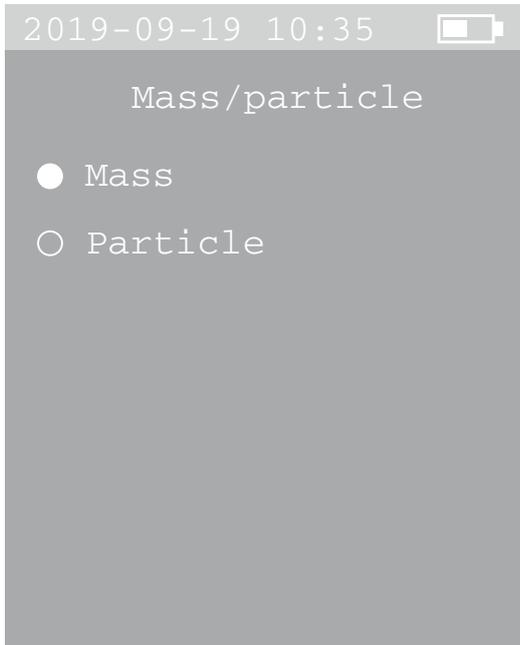


Info

You can delete the memory by first pressing the *ESC* button (4) in the measurement screen and then simultaneously pressing the Bluetooth button (5) until a longer acoustic signal is emitted.

Selecting the measuring mode

You can select whether particles (*Particle*) are counted or the mass concentration (*Mass*) of the particles is displayed.

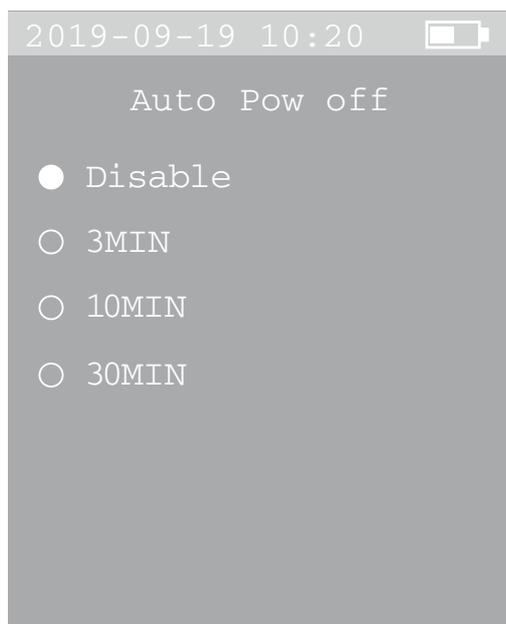


Please proceed as follows to select the measuring mode:

1. Press the *SET* (8) or *ESC* button (4) to select either *Particle* or *Mass* concentration measuring mode.
2. Press the *ESC* button (4) for approx. 2 s to return to the system settings menu.

Setting the automatic switch-off

You can select whether the device switches off automatically after 3, 10 or 30 min. You can also *Disable* automatic switch-off.

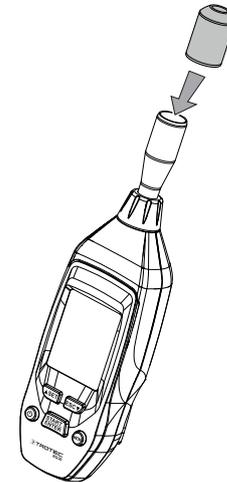


Please proceed as follows to set the automatic switch-off:

1. Press the *SET* (8) or *ESC* button (4) to select the desired switch-off time.
2. Press the *ESC* button (4) for approx. 2 s to return to the system settings menu.

Switch-off

1. Press and hold the *Power* button (7) until the colour display turns off.
 - ⇒ An acoustic signal is emitted.
 - ⇒ The device has switched itself off.
2. Put the protective cap (10) on the measuring funnel (1).



MultiMeasure Mobile app

MultiMeasure Mobile app



Install the Trotec MultiMeasure Mobile app on the terminal device you want to use in combination with the device.

Info

The Trotec MultiMeasure Mobile app is only available in the following languages: German, English, Spanish, French, Italian, Dutch, Polish and Turkish. Please select another language if your local language is not listed. Please also observe that the translations of the following screenshots in this chapter only serve for a better understanding of the user.

Info

Some of the app's functions require access to your location and an active Internet connection.

The app is available for download in the Google Play Store as well as in Apple's app store and via the following link:



<https://hub.trotec.com/?id=43083>

Connecting a measuring device

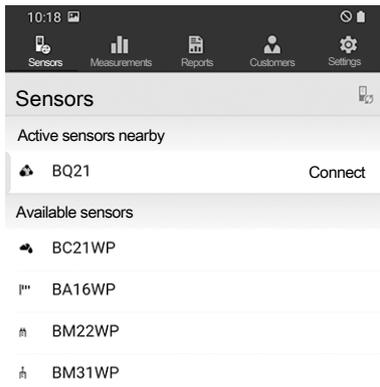


Info

The app can simultaneously be connected to several different measuring devices or measuring devices of the same type and also record several measurements at the same time. The number of sensors that can be connected depends on the terminal device.

Proceed as follows to connect a measuring device to the terminal device:

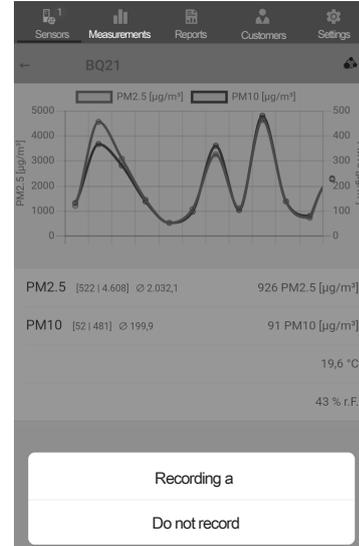
- ✓ The Trotec MultiMeasure Mobile app is installed.
- ✓ The Bluetooth function on your terminal device is activated.
- 1. Switch on the measuring device (see chapter Operation).
- 2. Make sure that the Bluetooth function is activated on the measuring device.
- 3. Start the Trotec MultiMeasure Mobile app on the terminal device.
 - ⇒ A list of active and available sensors will be displayed.
- 4. Press the  button to refresh the display if the desired measuring device is not displayed as an active measuring device.
 - ⇒ The terminal device now searches all active sensors again and shows them on the display.



- 5. Select the desired sensor from the list of active sensors.
 - ⇒ The measuring device and the terminal device establish a connection with each other.
 - ⇒ The measured value indication appears on the display.

Measured value indication

After the sensor has been successfully connected to the terminal device, the submenu for the measurement opens and a request appears on whether the measurement is to be recorded.



The current measured value and the corresponding unit are displayed in the measured value field.

After several measurements have been carried out, the lowest value, highest value, average value and current value are displayed below the measured value field.

Depending on the setting of the measuring mode on the device, the measured values are indicated on the display:

- particle concentration in *Number per litre* (n/l) or
- mass concentration ($\mu\text{g}/\text{m}^3$)

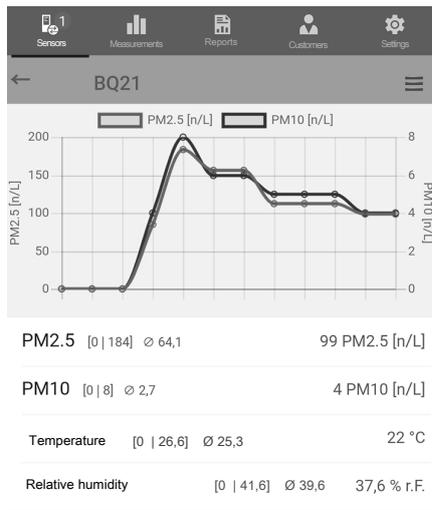
You can change the indication by changing the measuring mode on the device (see chapter Selecting the measuring mode).

After starting the measurement, a continuous measurement (X/T measurement) is carried out according to the preset measurement duration. The detected measured values are indicated in the measurement value display.

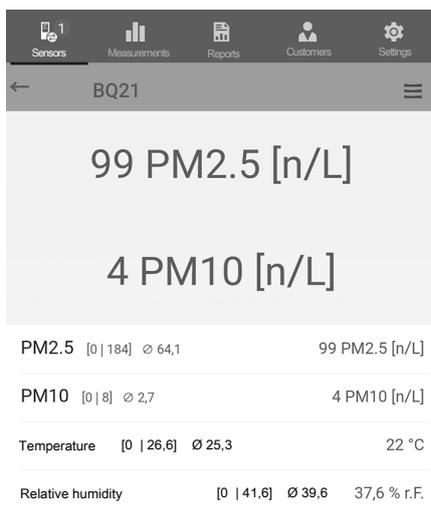
The measured values can be displayed numerically or graphically. By tapping the measured value field, you can switch between the display modes.

Particle concentration measuring mode

Graphic display:

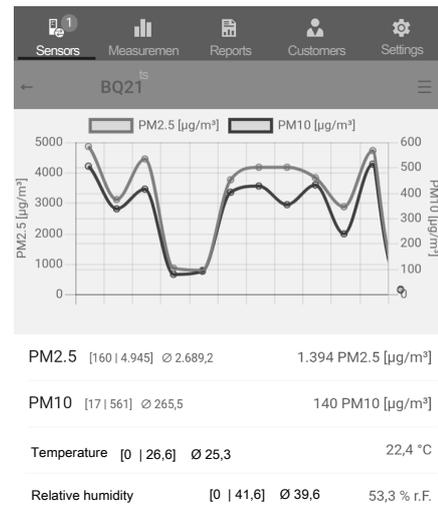


Numeric display:



Mass concentration measuring mode

Graphic display:



Numeric display:



Measuring menu

Press the button or the free area below the measurement value display to open the measuring menu at the bottom of the display. You can select from the following options in the measuring menu:

- reset the min/max average value
- terminate the connection to the sensor
- view and modify sensor settings
- start recording of measured values

Recording measurements



Info

The minimum recording time is 30 seconds. If a measurement is interrupted or cancelled before this minimum measurement time has elapsed, it cannot be saved and may have to be performed again.

By actuating the *Start Recording* button, the app starts recording the measured values.

Instead of the  button, the symbol of the active sensor flashes to indicate that recording is in progress. You can press this flashing symbol or the free area below the measurement value display to open the context menu to stop recording.

You can choose from saving or discarding the record after stopping recording.

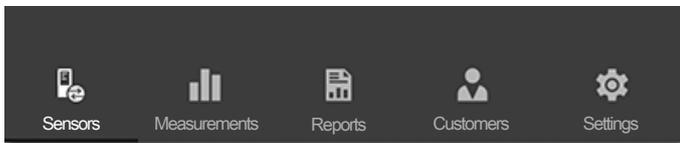
Menu bar

The functions of the MultiMeasure Mobile App are controlled via the menu bar from which the submenus can be accessed.



Info

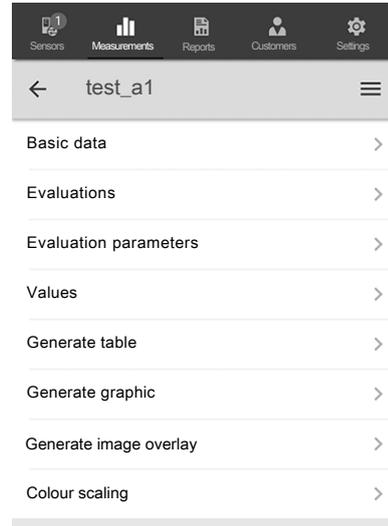
Depending on the operating system of the terminal device, the menu bar is located at the top (Android) or bottom (IOS) of the display. In the further description the displays of the Android system are shown as an example.



Designation	Function
Sensors	Opens the sensors overview. After connecting to the selected sensor, the submenu for the measurement opens.
Measurements	Opens the overview of saved measurements. The measurement series can be opened and edited.
Reports	Opens the overview of saved reports. You can generate on-site reports for the measurements and link them to customer data.
Customers	Opens the customers overview. You can select existing customers or create new customers.
Settings	Opens the settings menu. You can select the language and – depending on the measuring device – adjust different settings.

Submenu measurements

In the submenu *MEASUREMENTS*, the saved recordings of the measured values are displayed along with date, name and number of measuring points. Having selected the desired recording, the context menu of the measurement opens. Depending on the sensor type and the measuring mode, different functionalities can be opened. The following menu items are available:



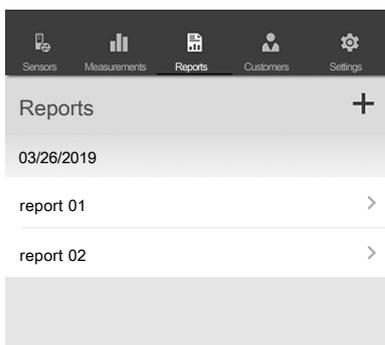
- **Basic data:**
Opens an overview of the data saved for the measurement.
- **Evaluations:**
Opens an overview of the evaluations generated for the measurement (photos, graphics and tables).
- **Evaluation parameters:**
Opens a menu to select and deselect individual evaluation parameters.
- **Values:**
Opens a tabular overview of all logged values for the measurement.
- **Generate table:**
Creates a table containing the logged values of the measurement and saves it as a *.CSV file.
- **Generate graphic:**
Creates a graphic representation of the logged values and saves it as a *.PNG file.
- **Generate image overlay:**
Combines a background image with the representation of the measured values.
- **Colour scaling:**
Allows you to adjust the colour display of the measured values.

Submenu reports

The reports generated in the MultiMeasure Mobile app are short reports providing a fast and simple documentation.

You can select from the following options in the *REPORTS* submenu:

- **Indicate existing reports:**
Having selected a report, a submenu opens where you can view and modify information.

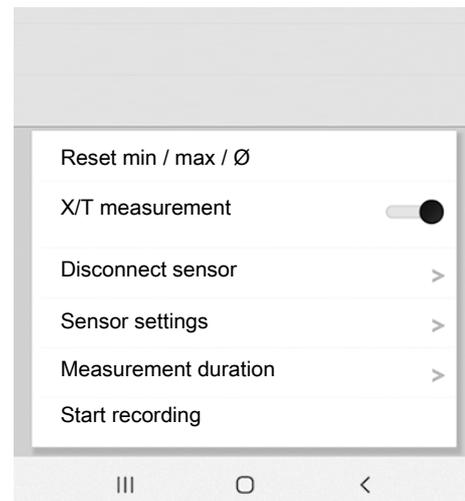


- **Generate a new report:**
Press the + button to open the input mask for a new report.

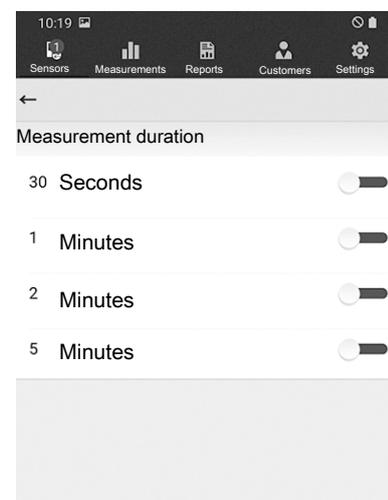


Measurement duration submenu

Press the > button to open the *Measurement duration* submenu.



In the *Measurement duration* submenu, the desired duration of the recording is selected. You can choose between 30 seconds, 1 minute, 2 minutes or 5 minutes. Press the button behind the desired time to select it.



Info

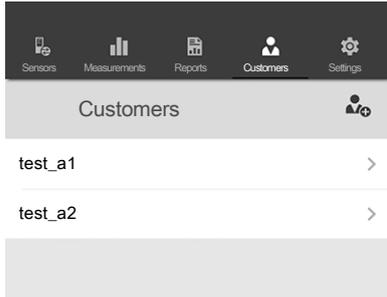
The parameters set here can also be set directly in the BQ21. The setting of the device from which the measurement is started is always given priority.

Submenu customers

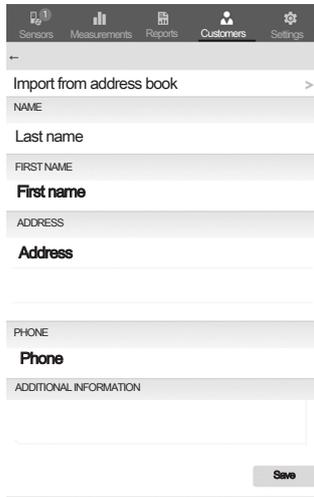
Using the integrated customer management function all of the measured data can be assigned to specific clients via the app.

You can select from the following options in the *CUSTOMERS* submenu:

- **Call up an already created customer:**
Having selected a report, a submenu opens where you can view and modify information or directly start a measurement.



- **Creating a new customer:**
Press the  button to open the input mask for a new customer. You can create a new customer set or import an existing contact from the phone book of the terminal device.



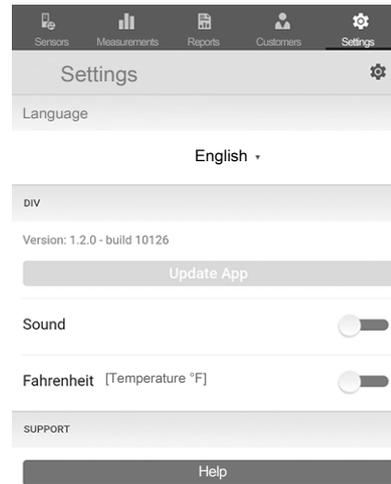
Submenu settings

In the submenu *SETTINGS* you can adjust different settings, e.g. changing the menu language.



Note
The various sensors have slightly different setting options.

Example: Submenu *SETTINGS*:



Maintenance and repair

Charging the battery

The battery should be charged if the battery indicator (11) on the device flashes or if the device can no longer be switched on (see chapter Charging the battery).

Cleaning

Clean the device with a soft, damp and lint-free cloth. Make sure that no moisture enters the housing. Do not use any sprays, solvents, alcohol-based cleaning agents or abrasive cleaners, but only clean water to moisten the cloth.

Repair

Do not modify the device or install any spare parts. For repairs or device testing, contact the manufacturer.

Errors and faults

The device has been checked for proper functioning several times during production. If malfunctions occur nonetheless, check the device according to the following list.

Display segments are only faintly visible or flicker:

- The battery capacity is too low. Recharge the battery without delay.

The device unexpectedly indicates an abnormally high or inexplicable particle concentration at different locations in the room:

- Check whether the device has been exposed to strong sunlight or concentrated light from other (possibly artificial) sources. This can affect the optical sensor and cause a malfunction. For this reason, do not position the device in exposed locations (e.g. on window sills).
- Switch the device off and restart it.
- If the device continues to indicate high values, use another, comparable device (if possible) and check whether it indicates a similar particle concentration.
 - If the reference device, too, indicates abnormally high values, it can be assumed that the particle concentration is indeed significantly increased.
 - If the reference device indicates a significantly lower or negligible particle concentration while the affected device continues to indicate excessive values after another restart, the affected device must be repaired/inspected.

Disposal

Always dispose of packing materials in an environmentally friendly manner and in accordance with the applicable local disposal regulations.



The icon with the crossed-out waste bin on waste electrical or electronic equipment is taken from Directive 2012/19/EU. It states that this device must not be disposed of with the household waste at the end of its life. You will find collection points for free return of waste electrical and electronic equipment in your vicinity. The addresses can be obtained from your municipality or local administration. You can also find out about other return options that apply for many EU countries on the website <https://hub.trotec.com/?id=45090>. Otherwise, please contact an official recycling centre for electronic and electrical equipment authorised for your country.

The separate collection of waste electrical and electronic equipment aims to enable the re-use, recycling and other forms of recovery of waste equipment as well as to prevent negative effects for the environment and human health caused by the disposal of hazardous substances potentially contained in the equipment.



In the European Union, batteries and accumulators must not be treated as domestic waste, but must be disposed of professionally in accordance with Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators. Please dispose of batteries and accumulators according to the relevant legal requirements.

Only for United Kingdom

According to Waste Electrical and Electronic Equipment Regulations 2013 (SI 2013/3113) (as amended) and the Waste Batteries and Accumulators Regulations 2009 (SI 2009/890) (as amended), devices that are no longer usable must be collected separately and disposed of in an environmentally friendly manner.

Declaration of conformity

We – Trotec GmbH – declare in sole responsibility that the product designated below was developed, constructed and produced in compliance with the requirements of the EU Radio Equipment Directive in the version 2014/53/EU.

Product model / Product: BQ21

Product type: particle counter

Year of manufacture as of: 2021

Relevant EU directives:

- 2011/65/EU
- 2012/19/EU
- 2015/863/EU

Applied harmonised standards:

- EN ISO 12100:2010
- EN 300 328 V2.2.2
- EN 55032:2015/A11:2020-03
- EN 61010-1:2010/A1:2019-02

Applied national standards and technical specifications:

- Regulation (EC) 1907/2006
- BS EN 61010-1: 2010
- BS EN 61010-1: 2010/A1:2019
- EN 301 489-1 V2.2.3:2019-11
- EN 301 489-17 V3.2.4:2020-09
- EN 301 489-52 V1.1.2:2020-12
- EN 50663:2017-10
- EN 55032:2015
- EN 61000-4-2:2009-03
- EN 61000-4-3:2006/A1:2008-02
- EN 61000-4-3:2006/A2:2010-07
- EN 61000-4-3:2006-05
- EN 61010-1:2010/A1:2019-02
- EN 61010-1:2010
- EN 61326-1:2013
- EN 61326-2-2:2013
- EN 62133-2:2017
- EN 62479:2010
- IEC 62133-2:2017
- IEC 62321-2:2013
- IEC 62321-3-1:2013
- IEC 62321-4:2013
- IEC 62321-4:2013/AMD1:2017
- IEC 62321-5:2013
- IEC 62321-6:2015
- IEC 62321-7-1:2015
- IEC 62321-7-2:2017
- IEC 62321-8:2017
- Regulation (EG) 552/2009
- Regulation (EU) 2018/2005

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